

AMENDMENTS TO THE CLAIMS

Please cancel claim 2 and amend claims 1, 3-6, 11-14, 16-19, 23-27, and 31 as follows:

1. (Currently Amended) A method of handling ~~messages~~ a message received at a messaging system server, the method comprising:

storing, in non-persistent storage, ~~messages received from at least one client~~ the message;

attempting to deliver ~~one of the messages stored in the non-persistent storage~~ the message;

continuing, after the attempt, to store the message in the non-persistent storage;

responsive to the attempt being successful, removing, ~~if the attempt was successful~~, the

message from the non-persistent storage; and

~~saving to persistent storage~~, after a delay interval has elapsed, ~~at least one of the~~

~~messages stored in the non-persistent storage; if the message continues to be stored in~~

~~non-persistent storage, saving the message to persistent storage so that a message-~~

~~saved to persistent storage~~ the message can be retrieved and delivered.

2. (Cancelled)

3. (Currently Amended) The method of claim 1, wherein storing in the ~~nonpersistent~~ non-persistent storage comprises storing in a log queue.

4. (Currently Amended) The method of claim 1, further comprising transmitting an acknowledgement message to a client that sent ~~[[a]]~~ the received message, the acknowledgement message indicating that the received message will not be lost by the server in the case of server failure.

5. (Currently Amended) The method of claim 4, wherein transmitting ~~[[an]]~~ the acknowledgment message to the client comprises transmitting the acknowledgment message to the client for ~~a delivered message~~ successful delivery of the received message.

6. (Currently Amended) The method of claim 4, wherein transmitting [[an]] the acknowledgment message to the client comprises transmitting the acknowledgment message to the client for ~~the received message's storage~~ storage of the received message in persistent storage.

7. (Original) The method of claim 1, further comprising determining the delay interval.

8. (Original) The method of claim 7, wherein determining the delay interval comprises:

determining at least one metric based on messages handled by the server; and

determining the delay interval based on the at least one metric.

9. (Original) The method of claim 8, wherein the metric comprises a metric based on a number of sending clients using the server to deliver messages.

10. (Original) The method of claim 7, wherein determining the delay interval comprises dynamically determining the delay.

11. (Currently Amended) The method of claim 1, wherein ~~the received messages are~~ the message ~~was~~ received over a communications network.

12. (Currently Amended) The method of claim 1,

wherein ~~the messages comprise guaranteed messages~~ the message comprises a
guaranteed message; and

wherein the messaging system comprises a message-oriented middleware system.

13. (Currently Amended) A method of handling guaranteed messages received at a ~~message-~~
~~orient-~~ message-oriented middleware server over a network, the method comprising:

storing, in a log queue in non-persistent storage, guaranteed messages received from at

least one client as the guaranteed messages are received;

attempting to deliver one of the guaranteed messages stored in the non-persistent storage;

continuing, after the attempt, to store the guaranteed message in the non-persistent

storage;

~~responsive to the attempt being successful, removing, if the attempt was successful, the~~
guaranteed message from the non-persistent storage;
dynamically determining a delay time period;
~~storing to persistent storage, after the determined delay period has elapsed, at least one of~~
~~the guaranteed messages stored in the non-persistent storage, if the guaranteed~~
~~message continues to be stored in non-persistent storage, saving the guaranteed~~
~~message to persistent storage so that a message stored to persistent storage the~~
~~guaranteed message can be retrieved and delivered; and~~
transmitting a guarantee acknowledgement message to a client that sent ~~a received-~~
~~message the received guaranteed message whose delivery was attempted,~~ the
guarantee acknowledgement message indicating that the received guaranteed message
will not be lost by the server.

14. (Currently Amended) The method of claim 13, wherein transmitting the guarantee
acknowledgement message comprises:

~~transmitting the guarantee acknowledgement message for a delivered guaranteed message~~
~~if the guaranteed message is not persistently stored, the guarantee-~~
~~acknowledgement message otherwise being sent when the message is persistently-~~
~~stored~~
if the guaranteed message was successfully delivered, transmitting the guarantee
acknowledgement message; and
if the guaranteed message was not successfully delivered, transmitting the guarantee
acknowledgement message when the guaranteed message is persistently stored.

15. (Original) The method of claim 13, wherein dynamically determining the delay time period
comprises:

determining a metric based on messages handled by the server; and

determining the delay time period based on the determined metric.

16. (Currently Amended) A computer program product, disposed on a computer readable medium, for handling messages received at a server, the computer program including instructions for causing a server processor to:

store, in a non-persistent storage, messages received from at least one client as the messages are received;

attempt to deliver one of the messages stored in the non-persistent storage;

continue, after the attempt, to store the message in the non-persistent storage;

responsive to the attempt being successful, remove, ~~if the attempt was successful~~, the message from the non-persistent storage; and

~~save to persistent storage~~; after a delay period has elapsed, ~~at least one of the messages stored in the nonpersistent storage~~, if the message continues to be stored in non-persistent storage, saving the message to persistent storage so that a message saved to persistent storage the message can be retrieved and delivered.

17. (Currently Amended) The computer program of claim 16, wherein the instructions for causing the server processor to store messages in ~~[[a]]~~ the non-persistent storage comprise instructions for causing the server processor to store the messages in a log queue.

18. (Currently Amended) The computer program of claim 16, further comprising instructions for causing the server processor to transmit an acknowledgement message to a client that sent ~~a received message~~ the received message whose delivery was attempted, the acknowledgement message indicating that the received message will not be lost by the server.

19. (Currently Amended) The computer program of claim 18, wherein the ~~computer program~~ instructions for causing the server processor to transmit ~~[[an]]~~ the acknowledgment message to

the client comprise instructions for causing the server processor to transmit the acknowledgment message to the client for a message saved from non-persistent storage to persistent storage.

20. (Original) The computer program of claim 16, further comprising instructions for causing the server processor to determine the delay.

21. (Original) The computer program of claim 20, wherein the instructions for causing the server processor to determine the delay comprise instructions for causing the server processor to:

determine at least one metric based on the received messages; and

determine the delay based on the at least one metric.

22. (Original) The computer program of claim 21, wherein the metric comprises a metric based on a number of clients using the server to deliver messages.

23. (Currently Amended) The computer program of claim 16, wherein the instructions for causing the processor to determine the delay comprise instructions for causing the processor to dynamically ~~determining~~ determine the delay.

24. (Currently Amended) A message oriented middleware server, the server comprising:

non-persistent storage;

persistent storage; and

at least one processor; and

instructions for causing the server processor to:

store, in the non-persistent storage, messages received from at least one client as the messages are received;

attempt to deliver one of the messages stored in the non-persistent storage;

continue, after the attempt, to store the message in the non-persistent storage;

responsive to the attempt being successful, remove, ~~if the attempt was successful~~, the message from the non-persistent storage; and

~~save to persistent storage~~, after a delay period has elapsed, ~~messages stored in the nonpersistent storage~~; if the message continues to be stored in non-persistent storage, saving the message to persistent storage so that ~~a message saved to persistent storage~~ the message can be retrieved and delivered.

25. (Currently Amended) The server of claim 24, wherein the instructions for causing the server processor to store the messages in the non-persistent storage comprise instructions for causing the server processor to store the messages in a log queue.

26. (Currently Amended) The server of claim 24, further comprising instructions for causing the server processor to transmit an acknowledgment message to a client that sent ~~a received message~~ the received message whose delivery was attempted, the acknowledgment message indicating that the received message will not be lost by the server.

27. (Currently Amended) The server of claim 26, wherein the server instructions for causing the server processor to transmit ~~[[an]]~~ the acknowledgment message to the client comprise instructions for causing the server processor to transmit the acknowledgment message to the client as the message is stored from nonpersistent storage to persistent storage.

28. (Original) The server of claim 24, further comprising instructions for causing the server processor to determine the delay.

29. (Original) The server of claim 28, wherein the instructions for causing the server processor to determine the delay comprise instructions for causing the server processor to:

determine at least one metric based on the received messages; and

determine the delay based on the at least one metric.

30. (Original) The server of claim 29, wherein the metric comprises a metric based on a number of clients using the server to deliver messages.

31. (Currently Amended) The server of claim 24, wherein the instructions for causing the processor to determine the delay comprise instructions for causing the processor to dynamically ~~determining~~ determine the delay.